

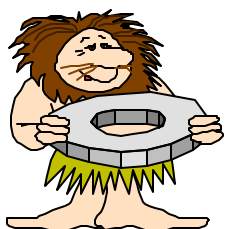
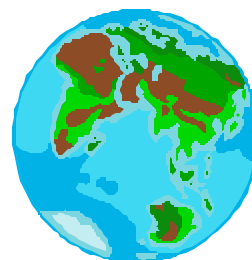
NEWS AND VIEWS

of Chemical Preparedness

EPA Region VIII

Spring 2000 — Volume 1

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Welcome to the new News & Views. I invite your input with news from your agencies that may be of interest to others. Address your news to C.G. Heister at the above address or fax to 303-312-6071 or e-mail Heister.Charles@epa.gov.

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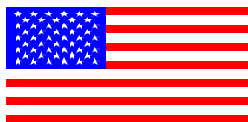
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Environmental Protection Agency

EPA is issuing this

Alert as part of its ongoing effort to protect human health and the environment by preventing chemical accidents.



April 1998 - An individual attempted to steal anhydrous ammonia from a nurse tank at a retail agricultural dealer in Iowa. The liquid withdrawal valve was left open on the nurse tank and caused an ammonia release that quickly vaporized to the air. One passerby was

overcome by the anhydrous ammonia fumes and collapsed. Another nearby resident was overcome by ammonia fumes after leaving her home. Both individuals were hospitalized. Several other area residents were evacuated as a precaution. The agricultural dealer installed security lights following the incident.

February 2000 - Approximately 1000 pounds of anhydrous ammonia were released when someone intentionally opened a valve in the middle of the night at a fertilizer dealer in

Missouri.

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The ammonia release caused 300 residents to be evacuated from their homes and two individuals reported respiratory irritation problems. Ammonia theft has been almost a weekly occurrence at this facility. A local law enforcement investigation is currently underway.

HAZARD AWARENESS

Anhydrous ammonia is used widely and in large quantities for a variety of purposes. More than 80% of the ammonia produced in the United States is used for agricultural purposes; less than 2% is used for refrigeration. Ammonia is generally safe provided handling, operating, and maintenance procedures are followed. Anhydrous ammonia is toxic, however, and can be a health hazard. Effects of inhalation of anhydrous ammonia range from lung irritation to severe respiratory injuries, with possible fatalities at higher concentration. Anhydrous ammonia also is corrosive and can burn the skin and eyes. Liquefied anhydrous ammonia is stored as a liquid and has a boiling point of minus 28 degrees Fahrenheit. At this temperature it can cause freezing burns.

If ammonia is released to the air, it may travel along the ground in a cloud instead of immediately rising into the air and dispersing. This dense gas behavior may increase the potential for exposure of workers and the public. Anhydrous ammonia containers have particular specifications as required by

the Department of Transportation (DOT). Storage tank specifications for anhydrous ammonia ensure that it is stored properly as a pressurized liquid and a corrosive chemical.

For example, some storage containers for anhydrous ammonia must have rated pressure relief devices to reduce the likelihood of over-pressurization of the container. Because anhydrous ammonia is corrosive, specific valves and hoses that do not readily corrode have to be used.

Pure anhydrous ammonia vapors can become an explosion hazard when in a confined space at concentrations between 16% and 25% by volume. Mixtures involving anhydrous ammonia contaminated with lubricating oil (e.g. in a refrigeration system), however, may lower the explosive range.

Anhydrous ammonia can be recognized by its pungent odor. Odor threshold varies with the individual but ammonia can usually be detected at concentrations above 5 ppm.

Concentrations above 100 ppm are uncomfortable to most people; concentrations in the range of 300 to 500 ppm will cause people to leave the area and are immediately dangerous to life and health.

(These excerpts are taken from the CEPP EPA Chemical Safety ALERT.)

For the full report check out EPA-F-00-005, March 2000, www.epa.gov/ceppo/ EPA is striving to learn the causes and contributing factors associated with chemical accidents and to prevent their recurrence.

Environmental News

The following is a composite of several articles dealing with asbestos contamination in Libby, Montana.

The U. S. Environmental Protection Agency began conducting tests of asbestos contamination in residents' homes, yards and insulation last November after reports that asbestos may still be contaminating the town.

The EPA also collected vermiculite insulation, which was made by W. R. Grace and Co., to see if it contains deadly asbestos fibers. It's unknown how many Libby area homes and residences across the nation contain this type of insulation marketed as Zonolite.

Grace mined vermiculite ore near Libby until 1990. When miners dug for the ore, they disrupted the asbestos mineral and released it into the air. Newspapers have reported that 192 miners and their family members have died from asbestos-related diseases. Another 375 people have been diagnosed, some with no apparent link to the mine or its workers.

These samples also include re-tests on air taken from 32 homes and three businesses in December. When these results were released in January, two houses showed high levels of asbestos fibers, but one of those houses contained a different kind of asbestos than the tremolite asbestos found in the earth near Libby. It had high levels of chrysotile, which is a type of

asbestos marketed for building products such as ceiling tiles and pipe insulation. But more tests are needed before it's known if a persistent health hazard exists in the town.



For more information contact: Wendy Thomi at the EPA Montana Operations office at 406-441-1150 X241; or Johanna Miller at the EPA Regional Office at 303 - 312 - 6804.

Training Opportunities

The **Rocky Mountain Hazardous Materials Association** will hold it's yearly Training and Education Seminar May 1-5, 2000, in Cheyenne, Wyoming. Interested parties should checkout the RMHMA website www.rmhma.com for conference agenda, location, and registration information. Sample of some programs to be offered: ***National Fire Academy Emergency Response to Terrorism: Tactical Considerations for Haz Mat, Confined Space Entry, Clandestine Drug Labs Highway Cargo Tanker Emergencies and others too numerous to mention.***

EPA Training offered in States

contact John Marshal 303-312-7026 or marshall.john@epa.gov :

Colorado –

Hazardous Materials Incident
Response— July 24 -- 28, 2000
Littleton, CO.

Montana –

Sampling for
Hazardous Materials–
September 19 –
21, 2000 – Helena,
Montana.



Utah –

Introduction to Groundwater
Investigations – May 9 – 11, 2000
Salt Lake City, Utah

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EPA Training (cont)

Advanced Groundwater Investigations –
May 12, 2000 -- Salt Lake City, Utah

Health in the Field by Barbara Benoy

Recently a friend of mine had reason to look up lockjaw or tetanus. I want to share what she found out about tetanus. Anyone who works in the field, whether taking samples, responding to emergencies, or other miscellaneous duties should be aware of it. We've read a lot lately about biohazards, but I haven't seen much about the old familiar one; tetanus. It is commonly thought that tetanus comes from rusty metal. In fact, tetanus exists throughout the soil environment!

Tetanus is a bacterial disease that affects the nervous system. It is contracted through a wound which becomes contaminated with spores of the bacterium *Clostridium tetani*. It can occur from wounds indoors or out, such as nail puncture wounds, insect bites, splinters, burns

lacerations, or fractures. It's easy to get a cut or scratch in the field and many times we're not even aware of it until the end of the day, if at all. The probability that we have gone and cleaned a field wound in pretty small unless it's a significant injury and your health and safety officer insists.

The incubation period for tetanus is usually 8 days, but can be anywhere from 3 days to 3 weeks. Muscle spasms usually begin at the site of infection. A common first sign is muscular stiffness in the jaw and facial muscles - "lockjaw". This can be followed by stiffness of the neck, difficulty in swallowing, rigid abdominal muscles, spasms, sweating and fever. Severe convulsions can develop. Spasms may continue for 10 - 14 days. If the spasms spread to the chest and throat, death from lack of oxygen may result. Sounds pretty bad. It can be fatal, especially in the very young and the elderly. The mortality rate is about 40%. The tetanus toxin is one of the most potent poisons known.

Complications of tetanus may include spasm of the vocal chords, of the respiratory muscles, fractures of the spine or long bones,



hypertension, abnormal heartbeats, coma, clotting in the blood vessels of the lung, and pneumonia.

With proper immunization, tetanus is rare. Tetanus immunization used to be a requirement for my job, though I don't know when my last shot was. Do you? Frankly, you're most likely to contract tetanus if you work in the garden and use animal manure, but if you're in the field, chances are you come into contact with tetanus more than you know. So, be prepared, get a tetanus booster shot. After all, your health is the most valuable tool you have.

We would appreciate any input from State agencies that may have information which would be of interest to others.

